African American Radiation Oncologists

Carl M. Mansfield, M.D., Sc.D.

As recently as ten years ago, few persons of color—from any of the multitude of nonwhite ethnicities that make up modern America—were admitted to white training programs in radiology. Of those rare individuals completing such programs, few went on to acceptance at major academic institutions or hospitals. The medical schools of Howard and Meharry universities served as the training institutions for the largest percentage of African American doctors. But there were noted exceptions. In the 1930s and 1940s Memorial Sloan-Kettering, the Universities of Chicago, Pennsylvania and Illinois, the Rush Medical Center, Temple University, and the Pennsylvania and Graduate Hospitals of Philadelphia were frequently listed by African American physicians as places where they had received specialty training. It was a challenge to find the stories of many of these individuals after their training, because African Americans in many states were not permitted to join most radiologic societies. Even those who "beat the system" to attend prestigious white training programs were denied the opportunity to present papers, publish findings, or hold national office.

After having reviewed a number of publications, I had the opportunity to read an unpublished paper by Dr. William E. Allen on the accomplishments of African American radiologists, in which he stated that "from the relatively scarce source of material available" he would "attempt to provide some information on this overlooked and frequently ignored segment of American Radiology." Dr. Allen's paper, titled "History of Black Radiology," was written in the mid-1970s. He noted that "little is

Note: When asked to write a section on the history of African Americans in radiation oncology, I knew the task would be difficult. In fact, all the historically disenfranchised groups, African Americans have been the most thoroughly excluded from all levels of academic medicine. I was fully aware that the American "system" would not have facilitated accomplishments by African Americans and that there would have been little interest in recording the accomplishments of the few that managed to beat such a system. Mindful of the problem of lack of material, I met with members of the radiology section of the National Medical Association at their 1963 national meeting to ask whether a chapter should be written. Their response was a strong and overwhelming expression that their story should be told, even if it took a great effort to produce a few pages. Their story is not just about accomplishments in the field of radiation oncology and radiology. It is a story that is interwoven into the very fabric of this country's racial attitude. The African American story is about what happened to a race, what happened to a people. They believe that their professional story, regardless of how abbreviated, illustrates their past treatment by the dominant medical culture and illuminates this culture's treatment of their race in general.
known of the history of Black Radiologists, yet they have played a significant role in the development of Radiology in this country, and have made many important contributions to the specialty. He went on to say, "Much of their meaningful work has gone unrecorded and unpublished. In other instances their names have been intentionally or unintentionally omitted from the published reports of investigations or research in which they actively participated." I will draw some of my material from this document. In 1965 Dr. E. R. N. Grigg, a Czechoslovakian-born radiologist, wrote a history of radiology. He inserted a section on "Negroes in American radiology." He recognized that he was doing a courageous thing and stated, "It is (considered) politically unwise to single out the Negroes among American radiologists, but such information is nowhere available in print." 

In writing about the history of radiation oncology in the United States, it is necessary to start with the general history of radiology, because of their common origin. Only in the last twenty to twenty-five years has there been a separation and a clearer distinction between the two specialties. Nor can we separate the history of the African American radiation oncologist from the larger history of African American physicians. A short review will show the environment in which African American radiation oncologists developed.

African American Physicians—An Historical Note

In 1944 Bousfield divided the history of African American physicians into three periods. The first was the slavery period, from 1619 to 1865; the second from 1866 to 1930; and the third extended to the time of his publication, 1931 to 1944. During the first period there were a few African American freedmen and slaves who practiced medicine. In 1729 Lieutenant-Governor Gooch of Virginia wrote, "I met a Negro...who performed many wonderful cures of disease." In 1740 the Pennsylvania Gazette described a runaway slave named Simon who was able “to bleed and draw teeth.” Another slave, James Derham, in 1788, at the age of twenty-one, was called the most distinguished physician in New Orleans. Dr. Benjamin Rush met Derham in 1788 and is quoted as having said, "I expected to have suggested some new medicines to him, but he suggested many more to me." In 1792 a runaway slave named Caesar published an article in the Massachusetts Gazette on symptomatology and treatment of poison. The City Gazette Daily Advertiser of Charleston, South Carolina, in 1797, advertised to find a runaway slave who "passes for a doctor among people of his color and it is supposed practices in that capacity about town." 

A medical education for African Americans was quite difficult to obtain. For example, Dr. Martin R. Delany was born in 1812 and educated in Pennsylvania, where he received "good schooling." He did an apprenticeship with a leading Pittsburgh physician and two additional apprenticeships (at least one being required for medical school admission in that day). He was rejected by all four medical schools to which he applied: University of Pennsylvania, Jefferson Medical College, and two medical schools in New York. Later he was accepted to Harvard Medical School in the class of 1850. 

Bousfield believed that the period between 1865 and 1930 was the most difficult for African American physicians. This period marked the beginning of the systematic exclusion of the African American from mainstream medicine and medical societies. The treatment of African Americans in white medical schools was typified by the experience of Dr. Francis Mossell. Dr. Mossell was accepted to the University of Pennsylvania in 1876. He was asked to sit behind a screen in the classroom but refused to do so. 

One of many instances of exclusion is exemplified by the struggle of African American physicians in Washington, D.C., to gain admission to local societies. To understand the following narrative, it is important to know that the Howard University and Medical School
were established between 1866 and 1868 in response to poor living conditions in the Freedmen's Bureau contraband camp that had been established for escaped slaves. The camp itself became Freedmen's Hospital. Having established a medical school and hospital with the help of white physicians, some of whom remained on the staff, the African American physicians applied to the County Medical Society of the District of Columbia for admission. This was denied. The American Medical Association (AMA) turned down an appeal. The action also kept these physicians from membership in the AMA. At the time of the publication of Dr. Bousfield's paper in 1945, there were still no African American members of the District of Columbia Medical Society.

Because of these membership restrictions, in 1895 African American physicians organized the National Medical Association (NMA). Within this association, the radiology section was started in 1949. Subsequently the radiation oncology portion of the section was begun.

African American physicians were forced to organize their own hospitals, because most institutions refused to admit "colored" patients. The following quote shows how these conditions served as a driving force for the building of separate hospitals: "many of the existing white hospitals refused Negro patients entirely. When they were accepted, they were housed in the basement. In some instances there was only a sheet separating these patients from the furnace. Other hospitals would only accept those specific cases needed for resident training."

For the third period Bousfield noted that there were ten African American physicians graduating per year from the seventy-four white medical schools. As late as 1942, at least sixty-four—or 86 percent—of the white medical schools did not accept any African Americans. The remainder accepted one per year or one every four years.

African American women suffered greatly under these circumstances, yet a few were able to excel. For example, Harriet A. Rice, M.D., was decorated by France in 1919 "for her devotion and ability... during the war." From its beginning, Howard University Medical School was also dedicated to the right of women to receive medical education. However there were obstacles to this approach. For example, in 1877, on a motion by the delegation of the Jefferson Medical College, the Howard delegation was not seated at the AMA convention, because at Howard men and women were taught such delicate subjects as anatomy in the same classes.

It is hard to describe or explain the unique situation in which African Americans have found themselves: a thorough and universal exclusion from all mainstream aspects of American life. This exclusion in medicine in general and in radiation oncology specifically gives a special urgency to finding and telling the stories of those who managed, against the odds, to train, to practice, and to contribute to the field.

I had originally intended to include other minorities in this chapter—the many races and ethnic backgrounds which make up the modern medical setting. However, I soon discovered that few people wanted either themselves or their own ethnic group to be called minorities. The fear of being so designated is understandable when one considers the historical risk of being "nonmajority" in the United States. This is especially understandable when minority status is equated with being black, thus putting minorities at risk for ill treatment and exclusion. I did not speak to every group, but I did speak to enough to realize that it would be unwise to determine in these pages who is or is not a minority.

America has never been kind to its minorities. Therefore, many groups can claim initial or periodic ill treatment. Possibly for this reason, many from these groups have tended to be unsympathetic to the situation of African Americans. They will often cite their own economic rise from poverty to middle class in one to two generations. However, the ill treatment of most other minorities has been short lived, usually spanning only one to two generations. Few minorities have had to endure thor-
ough, pervasive, universal exclusion for more than three hundred years. This exclusion of the African American has resulted in a subculture which by its very difference has produced even more intense efforts to further exclude.

A TIMELINE HISTORY OF AFRICAN AMERICAN RADIATION ONCOLOGISTS

Even in the face of such adverse circumstances, the African American radiation oncologist was able to endure and, in many instances, to achieve. They have contributed articles to peer review journals and, in recent years, have become chairpersons and directors of radiation oncology departments in academic institutions. Their history is, of necessity, episodic; a relatively small number of individuals, often working in isolation, precludes a seamless narrative. What follows are highlights of individual lives and achievements which mark the contributions of African Americans in the first century of radiation oncology.

1899—Marcus Wheatland (Fig. 10.1), who graduated from Howard University in 1895, became the first known African American radiologist. He practiced radiology in Rhode Island and became a charter member of the New England Roentgen Ray Society in 1896. The amount of radiation oncology that he practiced is, of course, unknown. However, his membership in the American Electrotherapeutic Association would indicate that, like many early practitioners in the field, his radiologic practice was both diagnostic and therapeutic.19

1918—J. Creely Brown, who practiced in Elizabeth, New Jersey, published an article titled “Treatment of Fibroid Tumors of the Uterus with Radium,” in the Journal of the National Medical Association (J.N.M.A.).11

1921—E. W. Willis, of Chicago, Illinois, discussed the use of pre- and postoperative irradiation in an article titled “Carcinoma of the Breast: Preoperative and Postoperative X-Ray Treatment,” in the J.N.M.A.12

1925—William S. Bainbridge mentioned X-ray treatment in his article “Multiplex Pathology and the Cancer Problem,” in the J.N.M.A.13

1926—James L. Martin (Fig. 10.2) received formal training in radiation oncology under George Pfahler. He was accepted as a fellow to the University of Pennsylvania in 1921 and studied in the Graduate School from 1921 to 1923. He stayed on as clinical assistant to Dr. Pfahler and as a staff member of the University of Pennsylvania Graduate School of Medicine. In 1926 he published an article with Pfahler in the American Journal of Roentgenology on an experimental study regarding the combined effects of roentgen and ultraviolet rays on carcinoma of the skin.14 He also became a diplomate of the American Board of Radiology (ABR) in 1938.15

1927—H. M. Green published “Cancer: A Brief Study in, with Special Reference to Its Surgical Treatment,” in the J.N.M.A., in which he, as a surgeon, discussed radiation therapy.16

1929—B. Price Hurst published “X-ray Treatment of Hyperthyroidism,” in the J.N.M.A. He was a member of the department of radiology at Freedman’s Hospital, Washington, D.C.17

1929—Columbus Harrison’s “Cancer” mentioned irradiation treatment in an excellent review of the history and treatment of cancer in the J.N.M.A.18

In 1932 there were fewer than fifteen African American radiologists in the United States, and none were

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Fig. 10.1 Marcus F. Wheatland (1868–1934) (Courtesy of the Center for the American History of Radiology, Reston, Va.)
accepted as members of the American College of Radiology (ACR).19

1930s—William E. Allen (Fig. 10.3) must be listed as the outstanding African American radiation oncologist. He graduated from the Howard University School of Medicine in 1930 and did an internship and residency at City Hospital Number 2 in St. Louis. In 1933, disturbed by the lack of training opportunities for African Americans in radiologic technology, he started the first school for their training. In the late 1930s he established one of the first approved radiology residencies for African Americans. In 1935 he was listed by the Council on Medical Education and Hospitals of the AMA as a physician specializing in radiology.20 These lists preceded the organization of the ABR in 1934. When Dr. Allen took and passed his ABR examination in 1935 he had to ride the freight elevator to his radiotherapy exams at the Jefferson Hotel in St. Louis.21 He was the first African American to join the ACR in 1940, became a fellow of the college in 1945, and received the gold medal in 1974 (Fig. 10.4). In 1949 he was a founder of the radiology section of the NMA. He was professor of radiology at St. Louis and Washington universities. He volunteered for the armed services and reached the rank of Lt. Colonel in the United States Army during World War II.22 He was a consultant to the secretary of the army, and served on multiple committees of the ACR. By 1960 he had published more than thirty scientific articles in Radiology and Radiation Oncology, the earliest of which were “Radiation Therapy in Carcinoma of the Cervix” in 1935 and “Advanced X-ray Therapy” in 1937.23

1933—Ulysses G. Dailey was a surgeon who contributed to oncology when he wrote extensively on the treatment of cancer. In 1933 he published an article titled “Treatment of Cancer of the Breast,” (J.N.M.A.) in which he mentioned irradiation.24

1934—J. R. Coff, who published extensively on the pathology of tumors, was a pathologist at Meharry Medical College who contributed to oncology. He discussed the use of X-rays and radium in his article “Subperiosteal Osteogenic Sarcoma,” (J.N.M.A.).25

In 1934 a few nonblack institutions had at least partially trained some African American physicians in roentgenology. Among these were the Sinai, New York; Columbia University, New York; Massachusetts General, Boston; Rush Medical School, Chicago; Cook County Hospital, Chicago; and Bellevue Hospital, New York.26 However, it is necessary to recognize the tremendous task of preparing and training African American physicians that fell to two medical schools: Howard University Medical School in Washington, D.C., and Meharry Medical College in Nashville, Tennessee.
It can be said, with no great exaggeration, that African Americans as a group owe their very health and survival to the men and women who were teachers and graduates from these institutions. Other than the few African American radiologists—radiation oncologists trained at a few non-black institutions, the burden of training physicians in this specialty field fell to the African American hospitals, whose staffs were routinely excluded from academic hospitals and other large, well-funded institutions. This made the task of training specialists in all areas especially difficult. This exclusion from mainstream medicine left an entire race at risk for poor health care.


1936—W. B. Stephens presented a description of the technique of X-ray therapy in his article, "The Present Status of the Diagnosis and Treatment of Carcinoma of the Uterus" (J.N.M.A.).

1938—Charles H. Kelley, Jr. (Fig. 10.5) taught and practiced radiation therapy at Howard University from this year until his death in 1956. He became a diplomate of the ABR, 1939.

1939—John W. Lawlah (Fig. 10.6) followed Dr. Kelly in teaching and practicing radiation therapy at Howard University. He became a diplomate of the ABR, 1939.

1940—Russell Minton (Fig. 10.7) published "The Possibilities of X-Ray Therapy in the Treatment of Cancer" (J.N.M.A.).


1940—J. R. Cuff published "The Mammary Gland in 702 Autopsy and 9220 Surgical Specimens" (J.N.M.A.), and discussed pre- and postoperative X-ray therapy.

1941—William H. Cargill published "Carcinoma of the Cervix: Diagnosis and Treatment" (J.N.M.A.).

1942—Lawrence D. Scott (Fig. 10.8) was coauthor on "Observations on the Results of Combined Fever and X-ray Therapy in the Treatment of..."

1950—Charles W. Thompson published "Carcinoma of the Lip" (*J.N.M.A.*). 

During the period between 1950 and 1970 there was gradual improvement in the acceptance of African Americans into radiology and the radiation field. This was during a time of intense civil rights activity by civil rights and governmental groups, and it became more difficult to practice policies of exclusion. However, the improvement was due mostly to the fact that more hospital internships and residency positions were available than graduates from medical schools to fill them. This is especially true in radiology and radiation oncology. Whatever the reason, it was during this time that a few African Americans were given the opportunity to demonstrate that their abilities were equal to those of anyone else. The competency of the African American physician was recog-
nized and contributed to a decrease in exclusions. They were accepted to radiological societies and began to serve on various committees and commissions within those societies. Thus, the number of African American radiation oncologists has increased from just a few to more than forty, as illustrated in Table 10.1. Many have presented excellent papers and published in peer-reviewed literature.

1956—Leslie L. Alexander (Fig. 10.10) received his M.D. from Howard University, 1952; became a professor at Downstate Medical Center, 1969; director of radiation oncology, Northshore University Hospital, 1970. He has published more than 160 papers and 40 abstracts. In 1970 Dr. Alexander became the first African American to chair the department of radiology at Down State Medical School, thus becoming the first professor and the first African American to head a department in a white medical school. From 1980 to 1985, he was a member of the Board of Chancellors of the ACR.

1957—Harold Perry (Fig. 10.11) received his M.D. from Howard University in 1948. He became a captain in the United States Air Force, 1953; Diplomate of the ABR, 1955; associate professor, University of Cincinnati College of Medicine, 1963; clinical professor of radiation oncology, Wayne State University, 1982. Today he is chairman of the department of radiology oncology at Sinai Hospital, a position he has held since 1981. He has been president of the Michigan Radiological Society (1977-1978). He has researched three-dimensional treatment planning and electron beam therapy, and has published many articles and abstracts.

1962—Carl M. Mansfield (Fig. 10.12) received his M.D. from Howard University in 1956 and his radiology certification in 1962, and became a fellow of the ABR in 1975. He passed the board examination in nuclear medicine in 1972 and became a fellow of the American College of Nuclear Medicine in 1990. He began to practice radiation oncology in 1964 and in 1974 became...
the first African American professor at Jefferson Medical College. During this time he did the original research on continuous monitoring of the temperature patterns of breast cancer and the use of nuclear medicine scanning in determining prognosis of liver metastases. In 1976 he became chairman of the department of radiation oncology and therefore the first African American to chair a department at the University of Kansas. While there, he pioneered and was the leading advocate for the use of the perioperative implantation of iridium-192 for the treatment of early breast cancer. He did clinical research with Dr. Carol Fabian on the use of radiation in the treatment of advanced Hodgkin’s Disease. He established the first school of radiation oncology technology and the first radiation oncology residency in the state of Kansas. In 1985 he became the first African American to chair a department at the Jefferson Medical College when he was appointed chairman of the department of radiation oncology and nuclear medicine. In 1989 he became president of the American Radium Society, thus becoming the first African American to head a major national radiological society. Today he is the associate director, Division of Cancer Treatment, at the National Institutes of Health in Bethesda, Maryland.

Table 10.1

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<th>African American Radiation Oncologists*</th>
<th>James Fred Ulles</th>
<th>George A. Alexander</th>
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<td>Olubunmi K. Acayomi</td>
<td>Leslie L. Alexander</td>
<td>William Mansfield</td>
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<td>Carl M. Mansfield</td>
<td>John B. McDay</td>
<td>Mary E. Barton</td>
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<td>Jean-Philippe Austin</td>
<td>Barbara Binkley</td>
<td>Harold Perry</td>
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<td>Gwendolyn H. Parker</td>
<td>Lori Pierce</td>
<td>Jo Ann Collier-Manning</td>
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<td>Raleigh I. Bouldware</td>
<td>Mark Cooper</td>
<td>Pamela Randolph</td>
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<td>Erich G. Randolph</td>
<td>Mack Roach</td>
<td>William F. Demas</td>
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<td>Henry E. Cotman</td>
<td>Jackie Dunmore-Griffith</td>
<td>Troy Scrogging</td>
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<td>Jerrold P. Saxton</td>
<td>Joseph Simpson</td>
<td>Alfred G. Khodson</td>
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<td>Karen Godette</td>
<td>Michele V. Halyard</td>
<td>John M. Smayes</td>
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<td>Glenda G. Smith</td>
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<td>Max S. Laguerre</td>
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<td>Brian Fuller</td>
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*There is a risk in listing names, because there are certainly some of whom I am unaware or have forgotten. For this I humbly apologize. I mean only for the list to show how there has been a wonderful improvement in the opportunities for training and employment in the field of radiation oncology. (This list is courtesy of Dr. Erich Randolph.)
1977—Alfred L. Goldson (Fig. 10.13) received his M.D. from Howard University in 1972 and has served as chairman of the department of radiation therapy, Howard University School of Medicine, 1979; and professor of radiation therapy, 1984. He has performed pioneering research in intraoperative irradiation and has worked in Tanzania and Liberia on cancer programs.41

1978—Joseph R. Simpson received his Ph.D. from the University of Chicago in 1967 and his M.D. from Harvard Medical School in 1973, passing the medical boards in internal medicine in 1977 and radiology in 1978. Currently he is an associate professor of radiation oncology at Mallinckrodt Institute of Radiology, Washington University School of Medicine.42

1987—Arthur T. Porter received his M.D. from Cambridge University in 1978 and has served as chairman of the department of radiation oncology at Wayne State University School of Medicine since 1991. He has done much of the pioneer work on strontium-89 for treatment of bone metastases.43

During the period between 1971 and the 1990s there has been an increase in the number of radiologists and radiation oncologists trained in virtually all of the academic centers and teaching hospitals. More attention is paid to qualifications than to ethnic background. This does not mean that all of the barriers have disappeared; it is only that the barriers are less high and less apparent. I believe that Dr. William E. Allen was correct when he wrote in the 1970s, "The future of Black radiologists is inextricably tied to the future of Civil Rights in this country. Progress in Civil Rights will mean progress for Black radiologists both in number and quality."44 I believe also that the future of African Americans is bound to the fact that they have demonstrated and continue to demonstrate equal competence. The future is promising.

It is also possible for many African Americans to tell of their personal experience in breaking through what was a seemingly impregnable wall to attain success in the field of radiation oncology. Many tell the stories of their success in this effort note that they did not do it alone. Often it was the support and acceptance of non-African Americans that made a high level of achievement possible. In this short historical review, many names have emerged from personal talks and from the literature and clearly are representative of many others about whom I did not hear. One early contributor was George Pfahler. Some of the most recent that I have known are Juan del Regato, Simon Kramer, Philip Hodes, Luther Brady, John Curry, Paul Fullagar, and many others.
There have been individuals of many ethnic backgrounds who gave of their time and talent to work at predominantly black institutions or to work in African American organizations and societies: Drs. Alan Oestreich (Fig. 10.14), Ebrahim Ashayeri (Fig. 10.15), and Ulrich Henschke (Fig. 10.16). Alan Oestreich has worked diligently in the radiology section of the NMA and presently serves as chairman of that section. He has recently published a centennial history of African Americans in radiology. Dr. Ashayeri has been a member of the department of radiology at Howard University for more than fifteen years. I must make special mention of Ulrich Henschke who devoted so much time and effort as chairman of the department of radiation oncology at Howard University. He trained a number of African American radiation oncologists. At the time of his fatal accident in 1980, he was in Africa working to develop radiation oncology in Tanzania.

This chapter was written for and is dedicated to those many African American physicians who were able to achieve in such adverse circumstances. They were able to train and be trained so that they could bring to their people the high levels of specialty health care available to other Americans. There are probably many accomplishments that I have not included, but there was no intent to be exclusive. This has been an attempt to give examples of the experiences of a people.

REFERENCES
I wish to thank Dr. Harold Perry for his assistance in providing names of African American radiation oncologists.

6. Ibid.
8. Ibid.
9. Curtis, Blacks, Medical Schools, and Societies.
11 Brown, G.J., "The Treatment of Fibroid Tumor of the Uterus with Radium," *J.N.M.A.* 10 (1918); 110-112.
13 Bainbridge, W.S., "Multiple Pathology and the Cancer Problem," *J.N.M.A.* 15 (1923); 16-20.
16 Green, H.M., "Cancer: A Brief Study of, with Special Reference to its Surgical Treatment," *J.N.M.A.* 19 (1927); 177-179.
17 Hurst, R.R., "X-ray Treatment of Hyperthyroidism," *J.N.M.A.* 21 (1929); 100-102.
19 Holton, "History."
20 Grigg, "Trail.
21 Holton, "History."  
22 Curtis, "Blacks, Medical Schools, and Societies.
26 Holton, "History."  
28 Stephenson, W.B., "The Present Status of the Diagnosis and Treatment of Carcinoma of the Uterus," *J.N.M.A.* 28 (1936); 115-118.
29 Holton, "History."  
30 Ibid.
34 Carriull, W.H., "Carcinoma of the Cervix: Diagnosis and Treatment," *J.N.M.A.* 33 (1941); 61-63.
37 Thompson, C.W., "Carcinoma of the Lip," *J.N.M.A.* 42 (1950); 152-158.
39 Among Dr. Perry's publications are: Perry, H., and Chu, F.C.H., "Value of Radiotherapy in the


44 Allen, "History."

45 Oestreich, A.E. A Centennial History of African Americans in Radiology (Takoma Park, Md.: Section on Radiology of the NMA: 1996)