Twenty Years of Nuclear Medicine at NIH

In the 20 years since the National Institutes of Health (NIH) established its Department of Nuclear Medicine, the NIH has emerged as one of the leaders in nuclear medicine research.

Spread over 306 acres in Bethesda, MD, just outside of Washington, DC, the NIH is comprised of 11 institutes, and its origin traces back to the Marine Hospital Service established in 1798 for the relief of sick and disabled seamen.

The Department of Nuclear Medicine is located in the NIH Clinical Center, a 540-bed hospital devoted to patients who have the precise type or stage of disease under investigation by any of the 11 institutes.

Jack D. Davidson, MD, helped convince the NIH that a nuclear medicine department was needed because investigators from several institutes were requesting radionuclide procedures. In 1966, the department became a reality, with Dr. Davidson as chief.

From 1971–1982, Gerald S. Johnston, MD, served as chief of the department and made plans for the major expansion that occurred in the

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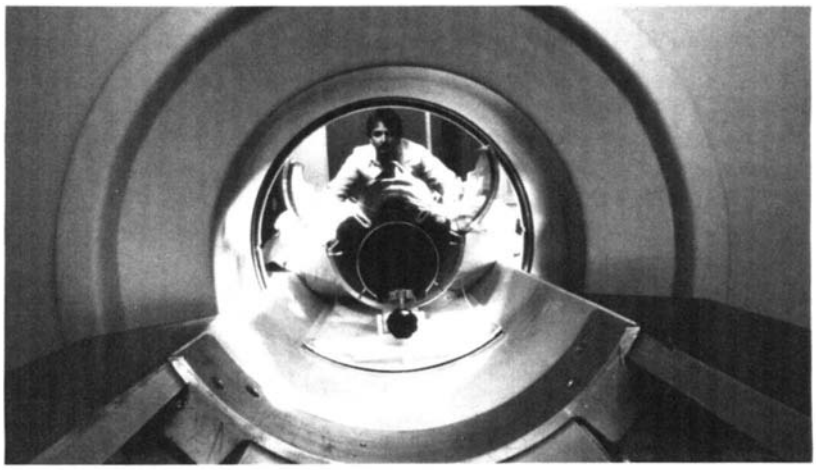

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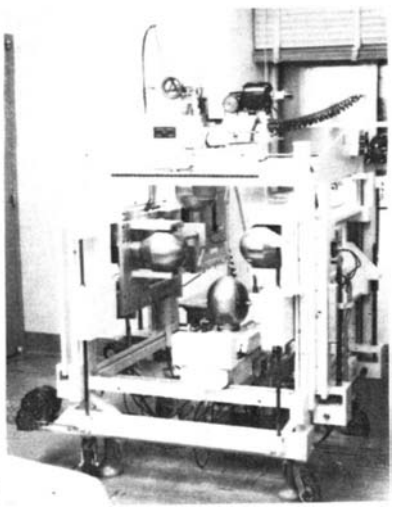
Jerry Jacobs, RT, assists a patient about to undergo a positron emission tomography (PET) scan at the NIH Department of Nuclear Medicine (Fig. 1). The department provides PET studies for many collaborative protocols with several institutes. Giovanni Di Chiro, MD, of the National Institute of Neurological and Communicative Disorders and Stroke, studied at NIH under G. Milton Shy, MD, who was among the first neurologists to use radionuclides to diagnose brain tumors in the 1950s. Today, Dr. Di Chiro is investigating the correlations between grade of malignancy and glucose utilization in cerebral tumors with fluorine-18 deoxyglucose studies at NIH.

(Courtesy of the Warren G. Magnuson Clinical Center, NIH)

On July 21, 1967, US President Lyndon B. Johnson, who once called government "the driving force in research" because of federal funding, visited the new Department of Nuclear Medicine at NIH (Fig. 2). Jack D. Davidson, MD (left), is explaining the tetrascanner to the president (2nd from left). **(United Press International)**



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The tetrascanner (Fig. 3)—with four gold/tungsten collimators cast by the Oak Ridge group of J.E. Francis, Persa R. Bell, and C. Craig Harris—was devised by Dr. Di Chiro, based on the original two-headed scanner built by Dr. Shy.

(Courtesy of Jack D. Davidson)

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1970s and 1980s. "When I arrived, we had one gamma camera, one whole-body counter, three physicians, two technologists, and a secretary," said Dr. Johnston.

Looking back on his NIH days, Dr. Johnston described health care at the Clinical Center as "vertical medicine," the in-depth study of a fixed number of very complex problems in patients who have been previously diagnosed.

Today, under the direction of Steven M. Larson, MD, the department has a staff of almost 70, and conducts research in five areas: positron emission tomography (PET), radiolabeled antibodies, clinical studies, imaging physics, and radiopharmaceutical chemistry.

[During The Society of Nuclear Medicine's 33rd Annual Meeting this month in Washington, DC, the NIH Department of Nuclear Medicine will host a tour of the facility on Sunday, June 22, at 6:30. For more information, contact: The Capital Informer, Inc., 2912 M Street NW, Washington, DC 20007-3713 (202) 965-7420.] ■

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William L. Ashburn, MD, monitors the console of the NIH's first commercial gamma camera, purchased in January 1967 (Fig. 1). At left are the members of the first NIH Department of Nuclear Medicine gathered around the controls of the whole-body counter in November 1966: (left to right) John C. Harbert, MD, chief of the Whole-Body Counter Section; Jack D. Davidson, MD, chief of the department; William L. Ashburn, MD, chief of the Diagnostic Radioisotope Section; and Joseph M. Brown, chief of the Radiation Safety Section.

(Courtesy of NIH)

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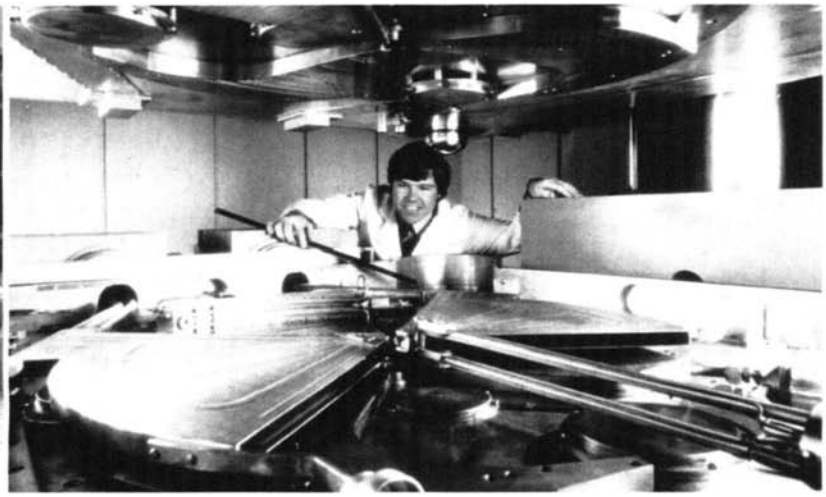

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On April 13, 1985, two cyclotrons were delivered (Fig. 3) to the NIH Department of Nuclear Medicine, which had recently constructed a three-story underground facility to house them. Paul Plascjak, of the NIH cyclotron staff, checks the alignment of the cyclotron central region (Fig. 4). The ion source (long horizontal tubes in the lower right area) carries the gas to be ionized into the central region. The two delta-shaped objects are the dees that define the radiofrequency field. Directly in front of Mr. Plascjak is the water-cooled deflector, which extracts the beam on its largest orbit prior to exiting the cyclotron.

(Courtesy of NIH)