

The Village Crier



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CANCER THERAPY FACILITY: THE FIRST SIX MONTHS

On September 7, 1976, Fermilab's Cancer Therapy Facility (CTF) made history when a volunteer cancer patient received a neutron dose treatment.

Since then, CTF activities have attracted world-wide attention. Press reports in newspapers, Time Magazine and other national media have spread the word of Fermilab's "neutrons against cancer" research. The Village Crier has chronicled CTF's progress; this is an update in a continuing series on the expanding role of the CTF.

Dr. Lionel Cohen, CTF department head and a radiation oncologist (tumor specialist) at Michael Reese Hospital, Chicago, says initial results are encouraging. However, he emphasizes the highly experimental nature of the program.

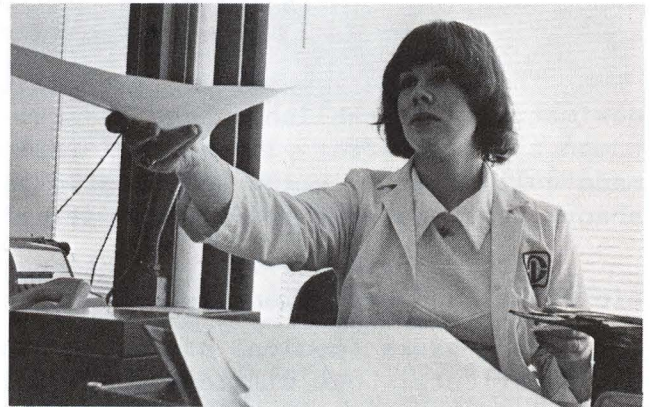
Of 51 patients referred by medical professionals for possible therapy, 45 have entered the program. To date, 38 patients have been irradiated. Most are Illinois residents, but other states represented are Michigan, Wisconsin, Ohio and Virginia. (One patient commutes weekly by airplane from Ohio.)

Most patients have been 40 to 60 years old, with men outnumbering women 3 to 1. A 29-year-old man is the youngest patient treated; the oldest, a man 77.

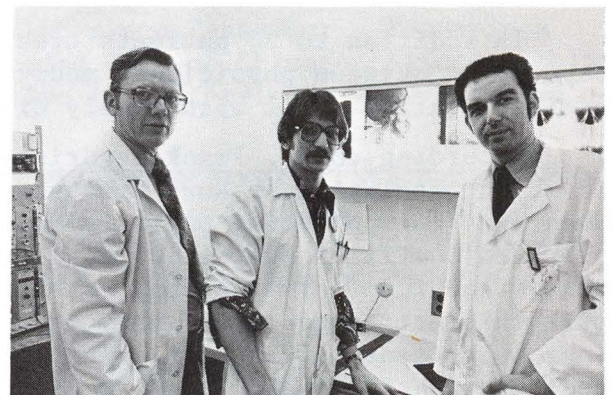
About two dozen patients have completed treatment. Fourteen are currently under treatment from one to three times weekly and three have dropped out of the project. Head and neck cancers account for the largest group of patients treated. Other types were abdomen, pancreas, breast, chest, brain, uterus and tissue.

About half of all patients irradiated receive only neutron therapy. Half were referred for a combination of neutron and conventional photon, X-ray, beam therapy. "It is fair to state," Dr. Cohen said, "that reactions have been relatively mild. No untoward or unexpected acute reactions have been observed in any patient treated so far. It is too early to evaluate the tumor response.

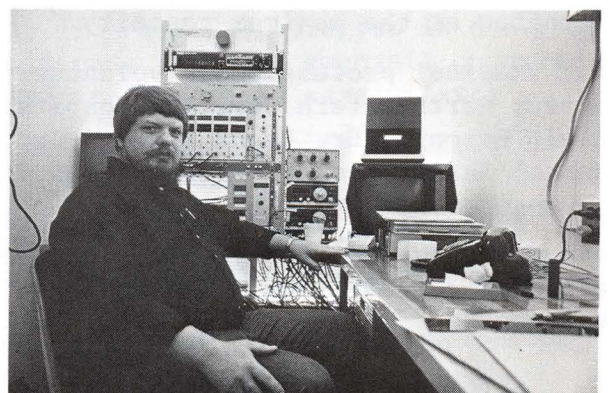
"We feel that these patients represent a sufficient number to complete the pilot studies," Dr. Cohen said, "and propose to follow them care-



...JoAnne Mansell, R.N., CTF protocol nurse, welcomes patients for therapy...



...L-R are F. Hendrickson, S. Ubaldi and Ivan Rosenberg in CTF control room...



...A. Jones, operations technician, is shown with beam control equipment...

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CANCER THERAPY (Continued)

fully for the evaluation of late reactions and tumor responses. "

Currently the CTF is using about 60 hours per week of linac beam time. Work involving patient treatment takes 22½ hours of this time. The CTF facility will add Saturday treatments to the Monday, Tuesday, Friday schedule, perhaps in May. Expanded therapy hours will increase patient throughput--averaging about 12 persons daily in 24-minute sessions (10 minutes for exposure, 15 for preparation)--and will also comply with a four-day treatment week required for participation in national neutron cancer treatment studies.

Most patients are irradiated while sitting in a specially-designed mobile chair that is lowered to the neutron beam line, a floor below the reception area. However, a thigh tumor was treated in the standing position without difficulty. In a colon tumor case, the patient's pelvis was irradiated with the patient lying down on a specially constructed litter attached to the chair base.

The clinical operation is supported by an extensive support program: beam physics; dosimetry and establishing the radiation distribution using a chemical substitute for human tissue. After clinical priorities, the major effort has been to build custom-made collimators--cement and plastic particle gun barrel-type guides that direct and absorb neutrons--for individual patients.

A third priority is the continuation of radiobiological studies on both micro-biological and mammalian systems.

Many users (medical professionals referring patients) have visited and observed their patients. One distinguished visitor last year was physicist David K. Bewley of London's Hammersmith Hospital, where neutron irradiation for cancer has been used since the 1960's. While at Fermilab, Dr. Bewley provided valuable input toward streamlining the CTF operation. The office guest book also records visitors from France, Switzerland (including CERN) and Japan.

In addition to 38 patients treated, CTF's other success story is one of cooperation--cooperation between physicians, medical physicists, radiation therapy technologists and Fermilab staffers, all with widely diversified specialties.

According to Dr. Frank Hendrickson, CTF deputy head for medical affairs and a radiation oncologist at Rush-Presbyterian St. Luke's Hospital, Chicago, Fermilab offers advantages for potential patients and the advancement of scientific knowledge. Of an estimated 8 million people in the metropolitan area, about 11,000 annually are cancer victims and 1,000 of these may be suitable for research at Fermilab. Typically, after patients are treated at CTF they then return to work, their homes or travel accommodations. Its central location, with auto, train and plane transportation facilities readily accessible make Fermilab convenient to many patients.

Of about 40 referring physicians, about a dozen have volunteered services in the clinic. Volunteers have supervised treatment, examined patients on treatment, noted responses and reactions and dictated clinical notes. "This has been an invaluable aid" Dr. Cohen said, "and made it possible for Dr. Hendrickson and myself to continue the operation at the maximum capacity."

Medical professionals volunteering include: Dr. William Brand and Dr. Stanley Hoover, Northwestern Memorial Hospital, Chicago; Dr. T.C. Chiang, Michael Reese Hospital, Chicago; Dr. Frank Hussey, Jr., Lutheran General Hospital, Chicago; and Dr. Raphael Garces and Dr. Richard Renn, Evanston Hospital.

Non-medical volunteers are: Jordan Finstein, computer department; Duane Voy, radiation physics; Danny Spelbring, Northwestern University graduate student on experiments 305/397; and Allan Halline, a Bucknell University undergraduate who assisted last month.

CTF staff members, in addition to Drs. Cohen and Hendrickson, are: Miguel Awschalom, Ph.D. physicist, deputy department head; Don Young, Ph.D. physicist, associate department head; Ivan Rosenberg, Ph.D. medical physicist; Mrs. JoAnne Mansell, R.N., protocol nurse; Kathy Gehl, administrative assistant; and Alan Jones, operations technologist.

INTRODUCING...SITE SECURITY SUPERVISORS

Jane Waters, security chief, has announced two recent appointments of shift supervisors. Called "captains," and on duty for 8-hour shifts on a 24-hour basis, supervisors assist in site patrol, monitor movement of persons and property and act as liaison with law enforcement agencies. Captains also supervise and train security guards supplied by Management Safeguards, Inc., a subcontractor.

Martin Jeffries became a site patrol captain in December. A Naperville area resident, he moved to Illinois from Tampa, Fla. He studied criminal justice at the University of South Florida and plans to complete degree requirements there. A U.S. Air Force veteran with Vietnam service, Jeffries is married and has two children.

Named a captain in December was Robert Armstrong of Bolingbrook. He is a retired Air Force master sergeant with federal agency security background. He managed a private security company before joining Fermilab. His family includes his wife and two sons.

John Hays is the "veteran" captain, having joined the force in June. Formerly with the U.S. Treasury Department, he came to Illinois in 1975 after serving a nine-year hitch in South Vietnam as a Defense Department security specialist. He also attended language school and the University of Saigon for instruction in Vietnamese law. He resides in West Chicago and his family includes his wife and four children.

Henry Prokop has been a security captain at Fermilab since September. Formerly a sergeant with the Northlake, Ill., department, he attended City of Chicago police schools and gained practical experience in the department's crime laboratory. He is a Bellwood resident.

Chief Waters has directed the security department since June, 1976. She had service as a supervisor and earned a bachelor's degree with a major in corrections from Aurora College. She plans to continue her education this spring with classes in public administration and management. A native of Port Washington, N.Y., she resides in Batavia.

The supervisors are available around the clock to handle emergencies and problems for the Laboratory and its personnel, as well as for visiting scientists and the general public.

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FAST CLASSES OPEN AGAIN MARCH 21

The spring classes of Fermilab Applied Skills Training (FAST) programs will begin on March 21 and will continue for eight weeks, through May 11. The FAST program is designed to strengthen basic skills of persons in technical positions, with the emphasis on practical application to Fermilab work. The courses offered in this third session are:

Electronics II - Basic semiconductor theory and application. Power supply fundamentals. Instructor: Jim Garvey.

Electronics III - A review of RLC circuits and resonance. General power supply techniques. Introduction to amplifiers and oscillators. Instructor: Jack Lockwood.

Math III - Course includes radicals, general equations, functions and graphs in algebra plus congruent triangles in geometry. Instructor: Louis Kula.

Vacuum Technology I - Course covers vacuum gauging, use of mechanical, diffusion and ion pumps, gasketing and use, and maintenance of leak detectors. Instructor: Jim Humbert.

All four classes will meet on Mondays and Wednesdays from 4:00 p.m. to 6:00 p.m. Applications are available in Personnel, CL 6E (from Vivian Butler and Ruth Thorson) and must be returned by Wednesday, March 9. Questions regarding the program should be directed to Jack Lockwood, Technical Coordinator of the program; Ruth Thorson, Administrative Coordinator, or the instructors.



...Fermilab security captains, (L-R) J. Hays, R. Armstrong, J. Waters (chief) M. Jeffries, H. Prokop...

PREDICTING EARTHQUAKES SUBJECT OF NEXT LECTURE HERE

Robert M. Hamilton, Chief of the Office of Earthquake Studies of the U.S. Geological Survey, will give the sixth Fermilab Bicentennial Lecture on Friday, March 4, titled: "Predicting Earthquakes in Two Cultures: Chinese and American." The lecture will be given in the Auditorium at 8:30 p.m. There is no charge, but tickets are necessary.

Dr. Hamilton recently returned from a tour of the People's Republic of China, where he learned of advances in earthquake prediction and how the Chinese people organize to respond to the predictions. (The Chinese successfully predicted a large earthquake on February 4, 1975, and the entire population played a key role in minimizing the effect of the quake.) The social issues involved in predicting earthquakes in China and the U.S. contrast sharply. Dr. Hamilton's presentation will include slides taken on his trip to China.

Dr. Hamilton received the degree Geophysical Engineer from the Colorado School of Mines in Golden, Colorado, in 1958. He received his M.A. and Ph.D. degrees from the University of California at Berkeley. He engaged in research studies on earthquakes from 1965 to 1968 at the Seismological Observatory of the New Zealand Department of Scientific and Industrial Research, then joined the U.S. Geological Survey as a Research Geophysicist at the National Center for Earthquake Research in Menlo Park, California. In 1972 Dr. Hamilton moved to Washington, D.C. to become Deputy for Earthquake Geophysics, and in 1973 assumed his current position.

Tickets for the Hamilton lecture are available in the Guest Office, CL 1-W, Ext. 3440.

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VIDEO COURSE AVAILABLE IN LIBRARY

A 22-lesson course on FINITE ELEMENTS is available on video tape in the Library. Anyone wishing to take the course should begin soon because it is available for a limited time only. For more information, contact the Library, Ext. 3401.

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MARTHA RAY EXHIBIT ADDED IN CENTRAL LABORATORY

The work of Martha Ray is now on exhibit for the month in the second floor lounge of the Central Laboratory. Martha Ray works in graphic arts and ceramics at the University of Chicago Midway Studios.

The exhibit of Japanese prints continues in the second floor lounge.

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PLAYGROUP OPENS NEW SESSION

The Fermilab Playgroup, a parent-run cooperative, in cooperation with NALWO, (for pre-school children of all Laboratory employees and visitors) has opened a new afternoon session for children from 18 months to three years. The new group currently meets from 12:45 to 3:15 on Monday and Friday and from 1:15 to 2:45 on Wednesday. These hours are open to change as the group grows.

Openings also still exist in the 3-5 year sessions. For more information, contact Nan Bunce, 879-2182 or Dottie Mantsch, 231-4786.

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VOLUNTEERS WANTED...to help clean, bag, and stratify prairie seeds, on Saturday, February 26, from 9 a.m. until 3 p.m. in the Village Barn. Bring work gloves and your lunch. Wear warm clothing. Beverages will be provided. For more information, contact Tony Donaldson, Ext. 4433.

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